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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,338	12/03/2003	Akisato Kimura	5259-000036	5281

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HARNESSE, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER

ARMSTRONG, ANGELA A

ART UNIT	PAPER NUMBER
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2626

MAIL DATE	DELIVERY MODE
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10/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/727,338

Applicant(s)

KIMURA ET AL.

Examiner

Angela A. Armstrong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-67 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on October 9, 2006, and February 3, 2004, are being considered by the examiner.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation “a projection distance calculation step of calculating, for the sub-signal after the- mapping which has been obtained by the signal mapping step, the distance from the sub-signal which has been obtained by the sub-signal re-creation step.” It is unclear as to what distance applicant is calculating with the limitation “the distance from the sub-signal,”

Claim 3 recites the limitation “top of the signal.” It is unclear as to what applicant regards as top of a signal.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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5. Claims 16-19, 52-56 and 57-59 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 16-19 and 52-59 are directed to a computer program. Computer programs claimed as the description or expressions of the programs are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program’s functionality to be realized. Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process (see USPTO Interim Guidelines for Patent Subject Matter Eligibility) and the Office treats a claim for a computer program, without the computer-readable medium needed to realize the computer program’s functionality, as nonstatutory functional descriptive material. When a computer program is claimed in a process where the computer is executing the computer program’s instructions, the Office treats the claim as a process claim. When a computer program is recited in conjunction with a physical structure, such as a computer memory, the Office treats the claim as a product claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. Claims 1-67 are rejected under 35 U.S.C. 102(b) as being anticipated by Kashino et al., (“A Quick search Algorithm for Acoustic Signals Using Histogram Features – Time Series Active Search,” Institute of Electronics Information and Communication Engineers of Japan, Vol. J82-D, No. 9, pp. 1365-1373, September 1999, with citations from the English translation).

8. Regarding claim 1, Kashino discloses a signal compression method for compressing an original signal which has been provided in advance to convert the original signal into a compressed signal, comprising: an initial sub-signal creation step of creating, from the original signal, sub-signals of shorter length than the original signal (section 2.1, 2.2-Feature extraction); a created sub-signal selection step of, for each of the sub-signals which have been produced by the initial sub-signal creation step, pruning the created sub-signal candidates to those for which the amount of data is less than for the original signal (2.1, 2.2-Feature Extraction, 2.3-Feature modeling means of histograms); a sub-signal re-creation step of determining upon a created sub-signal which is actually to be used, using the created sub-signal candidates which have been produced by the created sub-signal selection step (2.1, 2.2-Feature Extraction, 2.3-Feature modeling means of histograms); a compression mapping determination step of determining, from the respective sub-signals which have been produced by the sub-signal re-creation step, a mapping for calculation of a compressed signal (2.3-Feature modeling by means of histograms, 3.1.2-Vector quantization); and a signal compression step of calculating a compressed signal which corresponds to each of the sub-signals which have been obtained by the sub-signal re-creation step, based upon the mapping which has been obtained by the compression mapping determination step (2.3-Feature modeling by means of histograms, 3.1.2-Vector quantization).

Regarding claim 2, Kashino discloses a signal mapping step of mapping each of the sub-signals which have been obtained by the sub-signal re-creation step by the mapping which has been obtained by the compression-mapping determination step; a projection distance calculation step of calculating, for the sub-signal after the mapping which has been obtained by the signal mapping step, the distance from the sub-signal which has been obtained by the sub-signal re-creation step; and a compressed feature creation step of creating a compressed signal, based upon the respective sub-signals after mapping which have been produced by the signal mapping step and the projection distance which has been produced by the projection distance calculation step (sections 2-4).

Regarding claim 3, Kashino discloses initial sub-signal creation step segments the original signal from the top of the original signal, and takes the sub-signal after the segmentation as its resulting sub-signal (section 2.1, 2.2-feature extraction).

Regarding claim 4, Kashino discloses the created sub-signal selection step and the sub-signal re-creation step determine segmentation boundaries in order from the top of the original signal (section 2.4 – upper limit of similarity and skip width).

Regarding claim 5, Kashino discloses the created sub-signal selection step and the sub-signal re-creation step set a segmentation boundary shiftable width which is determined in advance, and, taking the segmentation boundary which has been obtained by the initial sub-signal creation step as a reference, determine segmentation boundaries which are to be actually utilized within a segmentation boundary shiftable range having the segmentation boundary shiftable width on both sides of the center thereof (section 2.4 –upper limit of similarity and skip width).

Regarding claim 6, Kashino discloses the created sub-signal selection step shifts the segmentation boundaries to some locations and calculates compression ratios, and, based upon the results thereof, selects a range in which the segmentation boundaries which are to be actually utilized can exist (section 2.4-upper limit of similarity and skip width).

Regarding claim 7, Kashino discloses the created sub-signal selection step automatically determines the number of times for calculation of compression ratio in the created sub-signal selection step, so as to reduce the number of times of calculation of compression ratio in the created sub-signal selection step and the sub-signal re-creation step (section 2-4).

Regarding claim 8, Kashino discloses the initial sub-signal creation step extracts features from the original signal, and uses the extracted features, represented as a sequence of multi-dimensional vectors, as a new original signal (section 2.1, 2.2-feature extraction).

Regarding claim 9, Kashino discloses a signal retrieval method for, at any location within a stored signal, which is an original signal which is registered in advance, calculating the distance from a reference signal, which is a signal which is taken as an object, and finding a location from the stored signal which is similar to the reference signal, comprising: the steps which are comprised in the signal compression method as described in Claim 1 (see rejection to claim 1 above); a reference feature extraction step in which a feature is produced from the reference signal (section 2.2-feature extraction); a stored feature extraction step in which a window upon which attention is focused is set within the stored signal, and in which a feature is produced from the stored signal within the window upon which attention is focused (section 2.2-feature extraction); a reference feature compression step in which a reference feature which has been produced by the reference feature extraction step is compressed, based upon the mapping

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which has been produced by the compression mapping determination step (section 2.1, 2.2-feature extraction); a feature matching step in which the distance is calculated between a reference compressed signal which has been produced by the reference feature compression step and a stored compressed signal which has been produced from the signal compression step by newly using the feature sequence which has been produced by repeatedly performing the processing of the stored feature extraction step while shifting the window upon which attention is focused (section 2.1 continuing to section 2.5); and a signal detection decision step in which, by comparing together the distance which has been produced by the feature matching step and a search threshold, which is a threshold which corresponds to the distance (section 2.1 continuing to section 2.5), it is decided whether or not the reference signal is present at the location within the stored signal, wherein the processing of the feature matching step and the processing of the signal detection decision step are repeated while shifting the window upon which attention is focused (section 2.1 continuing to section 2.5).

Regarding claim 10, Kashino discloses a distance re-calculation step in which, for the location in the database signal at which it has been decided by the signal detection decision step that the query signal is present, the distance between the feature sequence which has been produced by the reference feature extraction step and the feature sequence which has been produced by the stored feature extraction step is calculated; and a signal detection re-decision step in which, by comparing together the distance which has been produced by the distance re-calculation step and the search threshold, it is re-decided whether or not the query signal is present at the location of the database signal, wherein the processing of the feature matching step, the signal detection decision step, the distance re-calculation step, and the signal detection

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re-decision step is repeated while shifting the window upon which attention is focused; for some locations within the database signal, the distance from the query signal is calculated; and it is determined whether or not the query signal is present at the locations within the database signal (section 2.1 continuing to section 4).

Regarding claim 11, Kashino discloses a skip width calculation step in which, based upon the distance which has been calculated by the feature matching step, a Skip width for the window upon Which attention is focused is calculated, and the window upon which attention is focused is shifted by the skip width, wherein the processing of the feature matching step, the signal detection decision step, and the skip width calculation step is repeated while shifting the window upon which attention is focused; for some locations within the database signal, the distance from the query signal is calculated; and it is determined whether or not the query signal is present at the locations within the database signal (section 2.4-upper limit of similarity and skip width).

Regarding claims 12-23, the signal compression device, program and computer medium claims are similar in scope and content to the signal compression method of claims 1-11, and are therefore rejected under similar rationale.

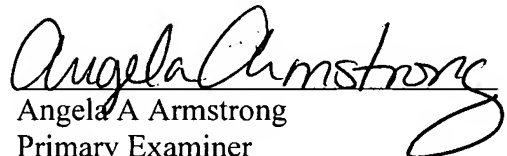
Regarding claims 24-67, the signal retrieval method, device, program, and computer medium claims are similar in scope and content to the signal retrieval method of claims 9-11 and compression methods of claims 1-8, and are therefore rejected under similar rationale.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 571-272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick N. Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Angela A. Armstrong
Primary Examiner
Art Unit 2626

AAA
September 28, 2007